

# REPORT ON MACHINERY

No. 74583

Received at London Office

SAT. 6 AUG. 1921

Date of writing Report

19

When handed in at Local Office

3.8.1921

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at Reg. Book.

Date, First Survey

23 May

Last Survey

26 July 1920

on the

S.S. "WORON" ex "Naimen"

(Number of Visits)

Master

Built at Vegesack

By whom built Bremer Vulkan

When built 1907

Engines made at

Vegesack

By whom made

Bremer Vulkan

when made 1907

Boilers made at

By whom made

when made 1907

Registered Horse Power

Owners

Glover Bros.

Port belonging to

London

Nom. Horse Power as per Section 28

551

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

## ENGINES, &c.—Description of Engines

Quadruple Expansion

No. of Cylinders

4

No. of Cranks

4

Dia. of Cylinders

24 3/16" 34 3/4" 50 9/16" 73"

Length of Stroke

53 3/8"

Revs. per minute

70

Dia. of Screw shaft

as per rule 15.35"

Material of

as fitted 15 1/8" (screw shaft)

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Yes

Is the after end of the liner made water tight

in the propeller boss

Yes

If the liner is in more than one length are the joints burned

Yes

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

Yes

If two

liners are fitted, is the shaft lapped or protected between the liners

Yes

Length of stern bush

5'-3 3/4"

Dia. of Tunnel shaft

as per rule 13.75"

as fitted 14"

Dia. of Crank shaft journals

as per rule 14.45"

as fitted 14 1/8"

Dia. of Crank pin

14 15/16"

Size of Crank webs

22 3/4" x 9 1/8"

Dia. of thrust shaft under

collars

14 3/4"

Dia. of screw

18'-6"

Pitch of Screw

18'-6"

No. of Blades

4

State whether moceable

Yes

Total surface

103.14 sq

No. of Feed pumps

2

Diameter of ditto

4 1/8"

Stroke

24 3/8"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 1/4"

Stroke

24 3/8"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

3

Sizes of Pumps

Weirs Feed: 8 1/2" x 6" x 18"

Gen. Service: 8 5/8" x 5 1/2" x 3 1/2"

Ballast: 8 1/2" x 10 1/2" x 2 1/2"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

4 - 3 5/8", 1-3 1/2" Indep. Bilge Suction.

& 1-3 1/2" Tunnel Well suction.

In Holds, &c. In Nos 1, 2, 3 & 4 holds. 2-3 1/2" in each.

No. of Bilge Injections

1

sizes

7"

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room & size

Yes 2 5/8"

Are all the bilge suction pipes fitted with roses

Yes

Are the roses in Engine room always accessible

Yes

Are the sluices on Engine room bulkheads always accessible

None

Are all connections with the sea direct on the skin of the ship

Only main Discharge

Are they

Valves or Cocks

Both

Are they

Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Yes

Are the Discharge Pipes above or below the deep water line

Both

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate

Yes

What pipes are carried through the bunkers

Bilge Suctions.

How are they protected

Wood casing.

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Yes

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

ER platform.

## BOILERS, &c.—(Letter for record)

Manufacturers of Steel

J.S.B.

Total Heating Surface of Boilers

7560 sq

Is Forced Draft fitted

Yes

No. and Description of Boilers

3. S. Ended, multitubular.

Working Pressure

220

Tested by hydraulic pressure to

Date of test

No. of Certificate

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

50 sq

No. and Description of Safety Valves to

each boiler

2 Spring Loaded.

Area of each valve

9.62 sq

Pressure to which they are adjusted

220 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

11"

Mean dia. of boilers

14'-3 1/2"

Length

12'-0"

Material of shell plates

Thickness

1 1/32"

Range of tensile strength

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

DR-LT

long. seams

DRS. QR.

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

1'-9"

Lap of plates or width of butt straps

2'-7 3/4"

Per centages of strength of longitudinal joint

rivets: 98.6%

plate: 93.0%

Working pressure of shell by rules

245

Size of manhole in shell

22" x 17 3/8"

Rule diameter

3'-5 3/4"

Size of compensating ring

McHeils.

No. and Description of Furnaces in each boiler

3 Deighton

Material

Rule

diameter

3'-5 3/4"

Length of plain part

top

bottom

Thickness of plates

5/8"

Description of longitudinal joint

Welded.

No. of strengthening rings

nil.

Working pressure of furnace by the rules

225

Combustion chamber plates: Material

Thickness: Sides

1/8"

Back

3/4"

Top

1/8"

Bottom

7/8"

Pitch of stays to ditto: Sides

9 x 7

Back

9 1/2 x 7 1/2

Top

7 1/2 x 7 1/2

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

242 lbs.

Material of stays

Area at smallest part

2.07

Area supported by each stay

63 sq

Working pressure by rules

263

End plates in steam space:

Material

Thickness

1/16"

Pitch of stays

14 1/8" x 14 1/8"

How are stays secured

D.N.

Working pressure by rules

228

Material of stays

Area at smallest part

6.77 sq

Area supported by each stay

221 sq

Working pressure by rules

318

Material of Front plates at bottom

Thickness

1"

Material of Lower back plate

Thickness

1"

Greatest pitch of stays

13 3/4" x 7 1/2"

Working pressure of plate by rules

277

Diameter of tubes

2 3/4"

Pitch of tubes

3 3/8" x 3 3/8"

Material of tube plates

Thickness: Front

1 1/8"

Back

1 5/16"

Mean pitch of stays

9 1/8"

Pitch across wide water spaces

14 1/4"

Working pressures by rules

228

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

10 1/4" x 1 5/8"

IS A DONKEY BOILER FITTED?

No.

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— 1 Crank shaft, 1 screw shaft, 1 air pump rod, 4 main bearing bolts, 4 nuts, 4 sq. end bolts & nuts, 2 bottom end bolts & nuts, 16 coupling bolts, & nuts, 2 eccentric straps, 6 cylinder cover studs & nuts, 12 joints ring studs & nuts, 1 piston for each cylinder, 1 valve spindle, 1 crank pin bush, 2 crosshead bushes, 1 feed pump valves & seats, 1 bilge pump valves & seats, 1 safety valve spring, 1 Bram propeller blade, 16 plain boiler tubes, 9 stay tubes, Assorted bolts & nuts. Iron of various sizes.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } { During erection on board vessel - - - } Total No. of visits

Is the approved plan of main boiler forwarded herewith No.

Dates of Examination of principal parts—Cylinders ✓ Slides ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓ Crank shaft ✓ Thrust shaft ✓ Tunnel shafts ✓ Screw shaft ✓ Propeller ✓ Stern tube ✓ Steam pipes tested ✓ Engine and boiler seatings ✓ Engines holding down bolts ✓ Completion of pumping arrangements ✓ Boilers fixed ✓ Engines tried under steam ✓ Completion of fitting sea connections ✓ Stern tube ✓ Screw shaft and propeller ✓ Main boiler safety valves adjusted ✓ Thickness of adjusting washers Port Riv P: 9/16 S: 1/16 Centre Riv P: 3/8 S: 5/8 Star Riv P: 13/16 S: 13/16 Material of Crank shaft ✓ Identification Mark on Do. ✓ Material of Thrust shaft ✓ Identification Mark on Do. ✓ Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts ✓ Identification Marks on Do. ✓ Material of Steam Pipes ✓ Steel. Test pressure 600 lbs. Is an installation fitted for burning oil fuel No. Is the flash point of the oil to be used over 150°F. ✓ Have the requirements of Section 49 of the Rules been complied with ✓ Is this machinery duplicate of a previous case No. If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Engines & Boilers of this vessel have been opened out & examined, & the materials & workmanship found good. After having carried out the repairs recommended, the machinery was tried under steam & found to work satisfactorily. The machinery throughout is now in good & efficient condition, & eligible in my opinion to have the record of L.M.C. 7.21 marked in the Society's Register Book.

The amount of Entry Fee ... £ : : Special ... £ 30 : : Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ : :

When applied for ... Paid Aug 16<sup>th</sup> 21

C. N. Stewart. Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 12 AUG. Assigned L.M.C. 7, 21

MACHINERY CERT WRITTEN 1972 (dated 12/8/72)

